

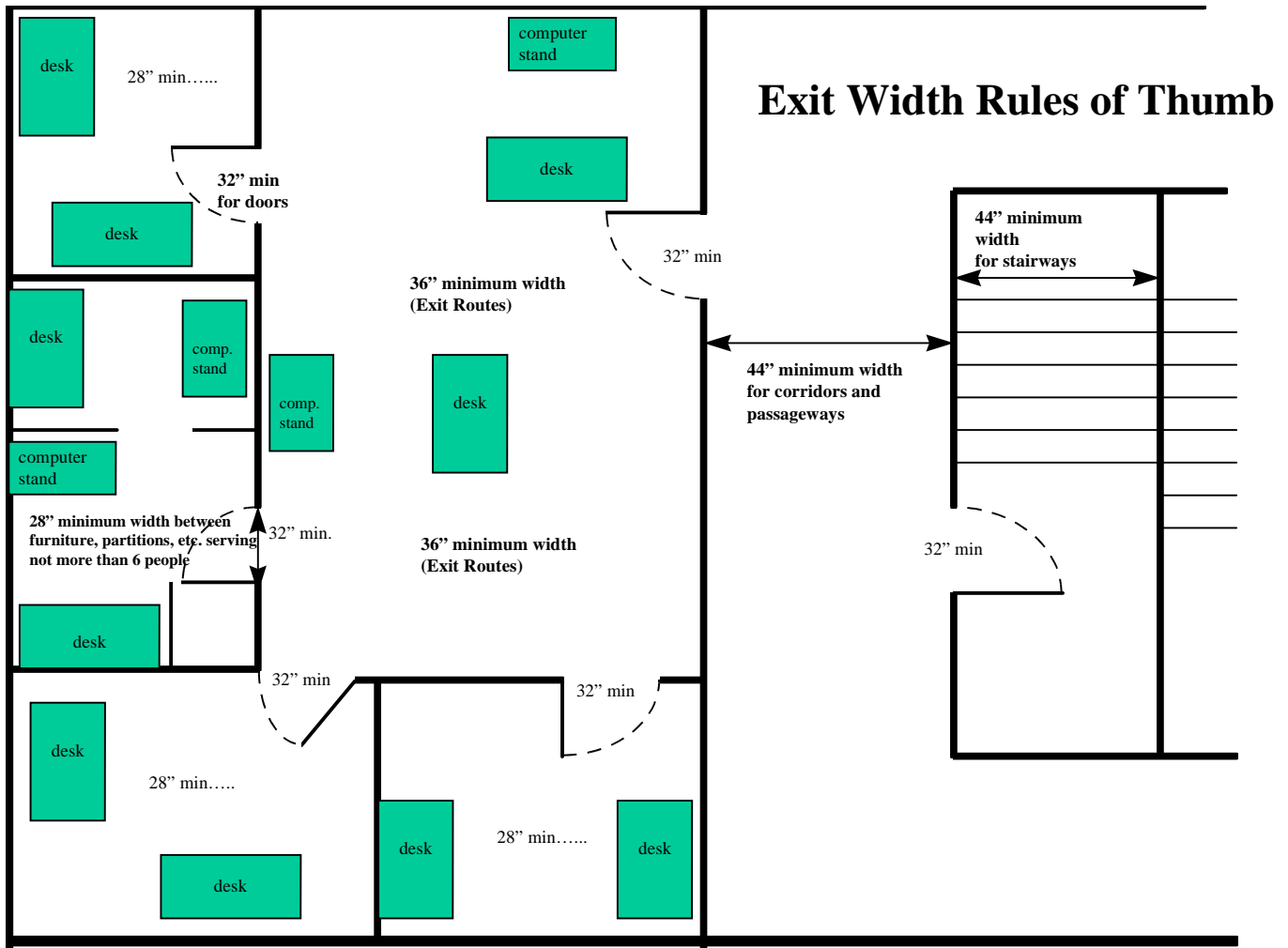
# **Appendix 5B**

## **Miscellaneous guidelines and instructions**

This appendix contains the following attachments:

- 5.1A Exit width rules of thumb
- 5.2A Guidelines for safe manual lifting and material handling
- 5.9A Small group weather safety action plan
- 5.9B Large group weather safety action plan

**Attachment 5.1A**  
**Exit width rules of thumb**



**Notes:**

1. 32-in. door widths are "clear" widths. (A "clear width" is the width of the opening through the fully open doorway, not the width of the doorframe.)
2. Minimum width of stairways is measured from wall to wall and not from handrail to handrail.

## **Attachment 5.2A**

### **Guidelines for Safe Manual Lifting and Material Handling**

#### **1. The need for safe lifting and material handling**

Overexertion in the workplace accounts for a large number of disabling injuries nationwide. Here at JSC, it is one of the most common causes for lost workdays. Most of these injuries involve the acts of manually handling materials. This chapter discusses recommendations regarding the safe load weight, size, location, and frequency of handling along with factors that mitigate these recommendations. You should follow these recommendations both at work and at home.

#### **2. Lifting risk factors**

Most back pain is actually the result of repeated micro-traumas to the tendons and ligaments in the back. If you routinely lift heavy objects (including small children), you may be injuring your back. Look at your activities at work and at home to determine whether you have any of these risk factors. Stressing your back at home can result in back pain at work. Risk factors can include:

- a. Lifting an object that is too heavy. A weight that can safely be handled by 90% of the worker population is 45 to 50 pounds for a man and 25 to 30 pounds for a woman
- b. Location/site-position of the load center of gravity with respect to you
- c. Frequency, duration, and pace
- d. Stability of the load
- e. Handle size and shape
- f. Environmental factors such as temperature, humidity, illumination, noise, vibration, friction, and stability of your footing

#### **3. Engineering controls to reduce these risk factors**

Engineering controls that you may use include:

- a. Load location—start and end relationship, floor condition, body posture
  - Store heavy objects at waist height and not below knee height
  - Keep heavy objects off floor
  - Minimize the distance from your body
  - Avoid deep shelves where two or more bulky containers could be placed back-to-back
  - Do not reach across table, etc. to lift
- b. Install handles on push-pull containers
- c. Install larger wheels on containers to minimize pushing/pulling forces
- d. Adjust visual environment
- e. Use automatic leveling devices lift tables, chain hoists, dollies, etc.

## **Attachment 5.2A**

### **Guidelines for Safe Manual Lifting and Material Handling**

#### **4. Supervisor and administrative controls**

- a. Determine the ability of workers before assigning duties:
  - The capacity to perform the physical act of lifting varies considerably not only from individual to individual but also by an individual over time
  - Attitude—workers' values and job satisfaction
- b. Train all employees in the:
  - Risks of lifting
  - Mechanics of lifting
  - Effects of lifting on the body
- c. Provide mechanical lifting aids
- d. Institute job rotation

#### **5. Work practice controls to reduce these risk factors**

You can take the following measures:

- a. Before you lift:
  - Test the weight of the object. Only you know your limits.
  - If you will be lifting something heavy, equip yourself properly. Protect your fingers with gloves and cover your toes with heavy shoes. You could stress your back if you have to move suddenly to avoid injury.
  - Position yourself so you do not have to twist any part of your body awkwardly or abruptly.
  - Do not reach down to lift an object while you are sitting. Get up and use correct lifting techniques.
  - Avoid reaching across counters, tabletops, desks, or other surfaces to pick up an object. If you cannot walk around to get it, slide the object toward you rather than lifting it.
- b. Ask yourself:
  - “Can I safely slide or push this object, rather than lifting it?”
  - “Do I need help?”
  - “Do I need to get handling equipment such as a dolly?”
  - “Is the path clear?”
  - “Is the path level?”
  - “Can I see where I’m going?”
  - “Do I have a clear landing spot for the object?”
- c. When you lift:
  - Do not use the small muscles in your back. Instead, use the large muscles in your legs.
  - Maintain the natural curves of your back.
  - Keep loads close to your body. If the object is too large to fit between your feet, get help.

## **Attachment 5.2A**

### **Guidelines for Safe Manual Lifting and Material Handling**

- Keep heavy objects in your safety zone—between shoulder-height and knuckle-height.
  - Avoid lifting objects from the floor.
  - Avoid simultaneous lifting and twisting.
  - Avoid rapid, jerky motions during lifting.
  - Design load packaging for easy worker handling. If possible, reduce weight of load by removing some of the items in the box or package.
  - Always lift with two hands.
  - To give your back extra support, tighten your abdominal muscles.
  - Continue to breathe normally. Never hold your breath.
  - Never bend at the waist to pick up an object.
  - Look up before you pick up. This will help you maintain the natural curves in your neck and lower back.
  - When lifting a heavy or bulky object, grasp it firmly, holding it as close to your body as possible. If it does not have lifting handles or if you cannot grasp it by the corners farthest from you or if you cannot get it close to your body, get help or get the proper handling equipment.
  - Do not lift higher than your safety zone. If the object is above your head, mount a sturdy, stable ladder to bring your chest as even as possible with the object.
  - If your job requires repeatedly lifting or moving objects, vary your activities, thereby allowing some muscles to rest while others are working.
- d. When you carry:
- Take small steps and move slowly.
  - If possible, face the direction in which you want to carry the load before lifting it. If you must change directions after you have lifted the load, pivot your feet, do not twist your back.
  - Use your lifting skills to set an object down as carefully as you lifted it.
  - The farther you must carry an object, the lighter the load should be. Do not carry a heavy load for a long distance. Break it up into several smaller loads, use proper handling equipment, or get help.

#### **6. Should I use a back belt when lifting?**

NIOSH does not recommend the use of back belts for lifting. If the belt is used properly (tightening the belt before lifting an item), it can prevent your bending at the waist when you lift. However, people frequently believe that the belt can help you safely lift a heavier load... THIS IS NOT THE CASE!!

#### **7. What should I do if I am experiencing back pain or discomfort?**

If you notice any pain or discomfort:

- a. Report your discomfort to your supervisor.
- b. Evaluate the stresses that you are placing on your back muscles at home and at work.
- c. Go to the JSC Occupational Medicine Clinic for a medical evaluation.
- d. Design your work and work area to minimize risk factors.

**Attachment 5.2A**  
**Guidelines for Safe Manual Lifting and Material Handling**

- e. Attend a training class on lifting.
- f. Use proper lifting techniques.

## **Attachment 5.9A**

### **Small Group Weather Safety Action Plan**

The following are weather safety requirements for small groups with 40 attendees or less:

#### **1. Your severe weather safety plan must identify:**

- a. A decision-making official who can be contacted by cell phone during the event. This person must:
  - Be assigned for the entire length of the event.
  - Remain alcohol-free.
- b. Protective areas and actions in the event of lightning or severe storms.
- c. Planned routes to protective areas.
- d. The specific notification process or signal to take protective measures and an ALL CLEAR notice.
- e. Planned sources of weather information. In addition to visual assessments (30/30 rule, outlined under weather hazards decision criteria, below), weather information sources must include *at least two* of the following:
  - Internet
  - All-Hazards National Oceanic and Atmospheric Administration (NOAA) Weather Radio
  - Handheld lightning detector
  - Continuous contact with the NWS or a private weather service

#### **2. Use the following criteria for weather hazard decisions:**

- a. Base any *lightning safety decisions* on the 30/30 rule:
  - 30 seconds or less flash--to-bang: Seek safe shelter.
  - Wait at least 30 minutes from the last thunder before resuming outdoor activities.
  - If you can't assess flash-to-bang time, use the sound of thunder as the cue to seek safer shelter.
- b. Base any *severe weather safety decisions* on an NWS Severe Thunderstorm or Tornado Warning for southern Harris County or northern Galveston County. Alternately, factors should include visual observations and "common sense." For example, a funnel cloud or small tornado that may be just forming, with no official NWS warning, should trigger protective measures for severe weather.

#### **3. The following are additional recommendations for weather safety at your event:**

- a. Include lightning safety tips or action plan in programs, posters, flyers, etc.
- b. Post lightning safety placards around the event area.

**Attachment 5.9A**  
**Small Group Weather Safety Action Plan**

**Small Group Weather Safety Plan Template**

**You must complete all sections. If you need more space, continue on the back. Please print legibly.**

**Date of Event:** \_\_\_\_\_ **Location:**    ☐ Gilruth    ☐ Other – Specify \_\_\_\_\_

**Group Name:** \_\_\_\_\_ **Estimated Number of Attendees:** \_\_\_\_\_

**Decision-Making Official:** \_\_\_\_\_ **Phone:** \_\_\_\_\_

**Specific Lighting and Shelter Location(s) for Attendees:**

**Evacuation route(s):**

**Notification Signals or Methods:**    Take Cover or Evacuate: \_\_\_\_\_

All Clear: \_\_\_\_\_

**Weather Monitoring Methods** (two required – other than visual assessment and using 30/30 rule):

- \_\_\_\_ Internet
- \_\_\_\_ Handheld lightning detector
- \_\_\_\_ NOAA All Hazards Weather Radio
- \_\_\_\_ Continuous contact with the NWS or a private weather service



## **Attachment 5.9B**

### **Large Group Weather Safety Action Plan**

The following are weather safety requirements for groups with more than 40 attendees:

#### **1. Your severe weather safety plan must identify:**

- a. Both a primary and a backup decision-making official who can be contacted by cell phone during the event. These individuals must:
  - Be assigned for the entire length of the event.
  - Remain alcohol-free.
- b. A weather watcher/reporter who monitors the sources below for changes in the weather.
- c. “Safety wardens” (one per 100 attendees minimum) to assure safety notifications and instructions from decision-making officials are disseminated to everyone.
- d. Protective areas and actions in the event of lightning or severe storms.
- e. Planned routes to protective areas.
- f. The specific notification process or signal to take protective measures and an ALL CLEAR notice.
- g. Planned sources of weather information. In addition to visual assessments (30/30 rule, outlined under weather hazards decision criteria, below), weather information sources must include *at least two* of the following:
  - Internet
  - All-Hazards NOAA Weather Radio
  - Handheld lightning detector
  - Continuous contact with the NWS or a private weather service
- h. The method to be used to maintain two-way communications between the primary and the backup decision-makers, the weather watcher, and all safety wardens. Possible options include cell phones and handheld radios.

**Note:** The decision-making officials, weather watcher, and safety wardens should meet before the event and review their planning as defined in this template.

#### **2. Use the following criteria for weather hazard decisions:**

- a. Base any *lightning safety decisions* on the 30/30 rule:
  - 30 seconds or less flash-to-bang: Seek safe shelter.
  - Wait at least 30 minutes from the last thunder before resuming outdoor activities.
  - If you can’t assess flash-to-bang time, use the sound of thunder as the cue to seek safer shelter.
- b. Base any severe weather safety decisions on an NWS Severe Thunderstorm or Tornado Warning for southern Harris County or northern Galveston County. Alternately, factors should include visual observations and “common sense.” For example, a funnel cloud or small tornado that may be just forming, with no official NWS warning, should trigger protective measures for severe weather.

**Attachment 5.9B**  
**Large Group Weather Safety Action Plan**

- 3. The following are additional recommendations for weather safety at your event:**
- a. Include lightning safety tips or action plan in programs, posters, flyers, etc.
  - b. Post lightning safety placards around the event area.

**Attachment 5.9B**  
**Large Group Weather Safety Action Plan**  
**Large Group Weather Safety Plan Template**

**You must complete all sections. If you need more space, continue on the back. Please print legibly.**

**Date of Event:** \_\_\_\_\_ **Location:** ☐ Gilruth ☐ Other – Specify \_\_\_\_\_

**Group Name:** \_\_\_\_\_ **Estimated Number of Attendees:** \_\_\_\_\_

**Primary Decision-Making Official:** \_\_\_\_\_ **Phone:**  
\_\_\_\_\_

**Backup Decision-Making Official:** \_\_\_\_\_ **Phone:** \_\_\_\_\_

**Weather Watcher or Reporter:** \_\_\_\_\_

**Safety Wardens** – at least 1 for each 100 attendees

- |          |           |
|----------|-----------|
| 1. _____ | 6. _____  |
| 2. _____ | 7. _____  |
| 3. _____ | 8. _____  |
| 4. _____ | 9. _____  |
| 5. _____ | 10. _____ |

**Specific Lighting and Shelter Location(s) for Attendees:**

**Evacuation route(s):**

**Notification Signals or Methods:** Take Cover/Evacuate: \_\_\_\_\_

All Clear: \_\_\_\_\_

**Weather Monitoring Methods** (two required – other than visual assessment and using 30/30 rule):

____ Internet	____ NOAA All Hazards Weather Radio
____ Handheld lightning detector	____ Continuous contact with the NWS or a private weather service

**Communication method used between Decision-Making Officials, Weather Watcher, and Safety Wardens:**